UNITED STATES DISTRICT COURT FOR THE DISTRICT OF MARYLAND
Northern Division

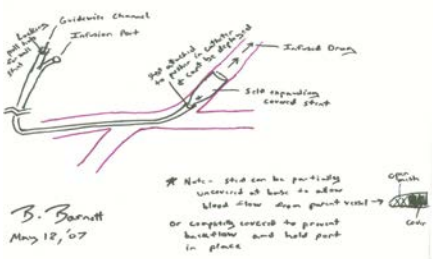
Dr. Bradley Barnett	*	
	*	
Plaintiff	*	
	*	
v.	*	
	*	
Surefire Medical, Inc.,	*	
	*	
and	*	
	*	
Dr. Aravind Arepally	*	
	*	Case No.: _____________________
Defendants.	*	
	*	

COMPLAINT

This is an action pursuant to the patent laws of the United States and the laws of the State of Maryland to have Dr. Bradley Barnett ("Plaintiff" or "Barnett") added as a named inventor on U.S. Patents 8,500,775; 8,696,698; 8,696,699; 9,089,341; 9,089,668; and 9,295,540, any continuations or divisionals related to those patents, and any of Defendants' patents or applications that are assigned to Surefire Medical, Inc. ("Surefire") and to which Barnett contributed to the conception of at least one claim (collectively, the "Surefire patents"), and for compensation from Surefire and/or Dr. Aravind Arepally ("Arepally") due Barnett as an inventor and for Defendants' unjust enrichment as a result of the intentional failure to name Barnett as an inventor.

At the heart of this complaint is a design for an anti-reflux catheter that Plaintiff Barnett developed while working under the supervision of Defendant Arepally at Johns Hopkins Medical Institution ("JHMI"), a division of Johns Hopkins University ("JHU") in Baltimore. A critical distinguishing feature of Barnett's design is the use of an expandable, conical-shaped mesh filter attached to the end of a prior art catheter to prevent reflux of caustic embolization agents. After obtaining knowledge of Barnett's design, Arepally left Johns Hopkins, co-founded Defendant Surefire, and was eventually named as an inventor on a series of Surefire patents that claim as an element of at least one claim an expandable, conical-shaped mesh filter attached to the end of a prior art catheter, the same basic design that Barnett developed with Arepally's knowledge while in Arepally's laboratory. Notably, Surefire expressly calls out the design in its patents as a departure from the prior art. The following illustrations drawn from Barnett's laboratory notebook (on the left) and Surefire U.S. Patent No. 8,500,775 (on the right) demonstrate the point:

Barnett Notebook: **U.S. Patent No. 8,500,775:**



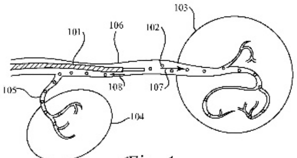


Fig. 1
Prior Art

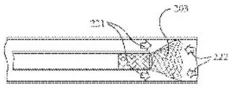


Fig. 2C

In further support of this complaint, Barnett hereby states and avers as follows.

JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this case pursuant to 28 U.S.C. §§ 1331, 1332(a)(2), 1338 and 1367.

2. This Court has personal jurisdiction over Defendants Surefire and Arepally because their actions as alleged herein caused tortious injury to Barnett, a Maryland citizen, in Maryland, and because, upon information and belief, each Defendant regularly solicits and conducts business in Maryland. Additionally, the patents at issue involve devices and related technology that was conceived and developed by Barnett in Maryland while a student at JHMI.

3. Venue is proper in this Court pursuant to 28 U.S.C. § 1391(b)(2) and (c).

PARTIES

4. Barnett is a resident of Maryland, having an address at 220 North Chester Street, Baltimore, Maryland 21231. Barnett graduated from JHMI in Baltimore, and holds a M.D. and PhD in Pharmacology and Molecular Sciences, also from JHMI, and is completing his medical residency at JHMI.

5. Surefire is a Delaware corporation having a principal place of business at 8601 Turnpike Drive, Suite 206, Westminster, Colorado 80031. Surefire is registered to do business in Maryland, and its resident agent for service of process in Maryland is Business Filings International Inc., 351 West Camden Street, Baltimore, Maryland 21201.

6. Arepally is an individual that, upon information and belief, resides in Georgia at 263 The Prado Northeast, Atlanta, Georgia 30309. Arepally is a co-founder and Chief Technology Officer of Surefire, and was a professor in the Division of Interventional Radiology at JHMI. Arepally is a named inventor on several of the Surefire patents.

FACTUAL ALLEGATIONS COMMON TO ALL COUNTS

Barnett Begins Work With Arepally at JHMI

7. Barnett and Arepally first began working together in 2005, when Barnett was a medical student and Arepally was a professor at JHMI. With Arepally as his supervisor, Barnett developed a proposal that later became the basis for a two year Fellowship granted to Barnett by the Howard Hughes Medical Institute (HHMI) and an NIH Grant to Arepally.

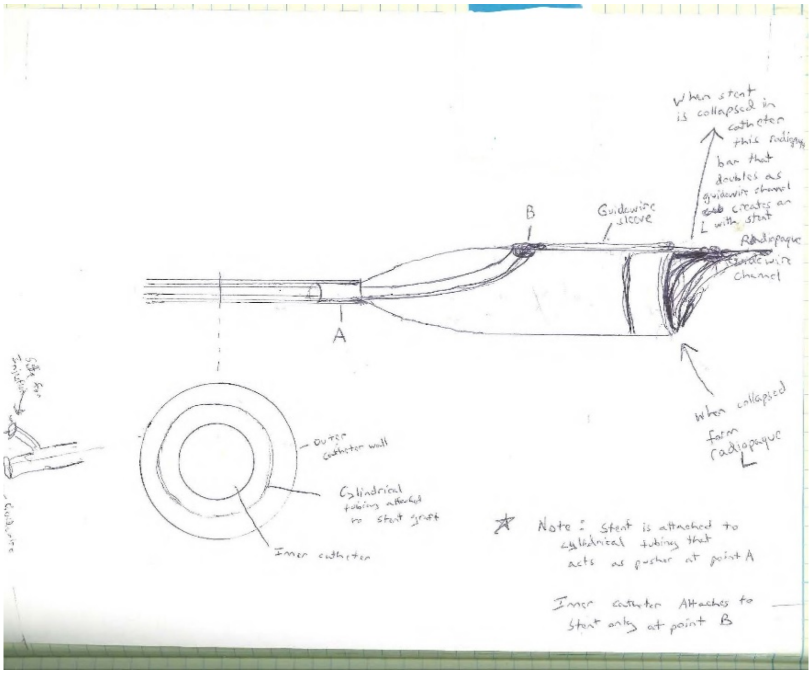
8. Ultimately, the initial work that was the subject of the HHMI proposal resulted in the development of novel X-Ray and MRI imageable alginate beads for islet cell transplantation. The alginate bead work was the subject of numerous publications on which Barnett, along with others, is an author.

9. Beginning in 2006, Arepally was assigned as Barnett's mentor, and laboratory head, for the HHMI Fellowship. Arepally has publicly acknowledged his mentorship of Barnett and touted that relationship as one of Arepally's professional credentials. Arepally, Barnett and others in the laboratory headed by Arepally worked collaboratively on several projects that resulted in publications or patent applications regarding the work.

10. As the laboratory head, Arepally was contractually required by HHMI guidelines to remain aware and have a clear understanding of work done by personnel in the laboratory, including Barnett. As Barnett's mentor under the HHMI program, Arepally therefore had full access to Barnett's laboratory notebooks and reviewed those notebooks on a weekly basis. In addition, Barnett provided a year-end summary of his work to Arepally, as required by the terms of the HHMI Fellowship.

11. The focus of Barnett's work during his HHMI Fellowship was on the development of embolization agents and delivery systems for those agents. In his first year of the HHMI Fellowship, 2006, Barnett focused on the development of embolization agents. Beginning late in his first year, and continuing into his second year of the Fellowship, 2007, Barnett's focus expanded to the development of delivery systems (catheters) for the embolization agents.

12. An early catheter design, the "side-access" catheter, developed by Barnett incorporated an anti-reflux covered mesh design that enables delivery of an embolic agent into a sacular aneurysm while preventing reflux into the parent vessel. This design was memorialized in Barnett's laboratory notebook to which Arepally had regular access as follows:


When stent
is collapsed in
catheter
bar that
doubles as
creates an
L with stent
B
Guidewire
sleeve
Channel
A
When collapsed
form
radiopaque
L
Outer
catheter wall
Cylindrical
to stent graft
Inner catheter
Note: Stent is attached to
acts as pusher at point A
Inner catheter Attaches to
Stent only at point B

Barnett Develops Anti-Reflux Catheter Based on Work With Arepally

13. In 2006, Arepally got Barnett involved in a project focused on the delivery of caustic embolization agents to the fundus of the stomach as a minimally invasive technique for effecting weight loss. The embolization agents were delivered via a catheter. Barnett was identified as an author on papers regarding the fundus delivery work of Arepally's laboratory.

14. Experiments regarding the fundus delivery were conducted on pigs, and revealed that the caustic agents were refluxing from the catheter, causing non-target embolization in subjects resulting in harm and even death to the subjects. JHMI personnel working on the fundus project, including Arepally and Barnett, determined that they needed a better system to help limit or avoid such non-target embolization. The conclusions regarding the need for non-target embolization were published in papers acknowledging Barnett's contribution to the fundus delivery work.

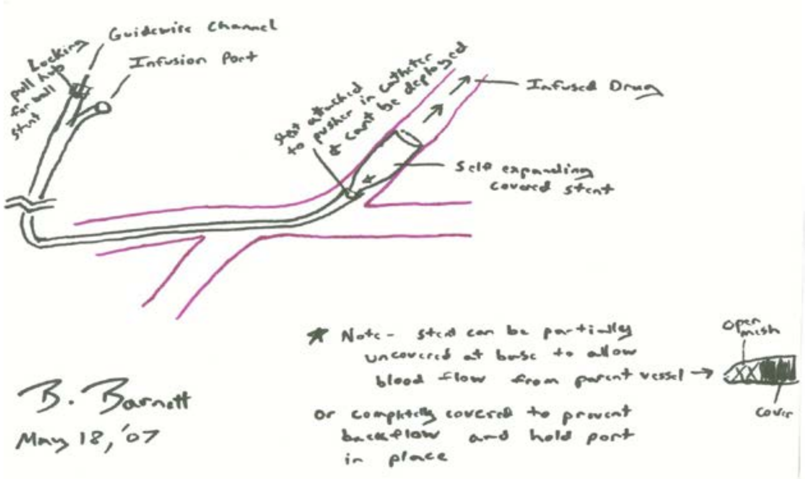
15. In the second year of his HHMI Fellowship, with Arepally as his laboratory head, Barnett therefore began work on developing catheters to prevent reflux after embolization using

the alginate beads developed while in Arepally's laboratory. Building on his prior work, such as the previously conceived "side access" catheter, Barnett conceived of a catheter with an anti-reflux tip to prevent the non-target embolization that had been experienced with the fundus work, and identified chemoembolization as an application for such a catheter.

16. Arepally, by and through his assistant, provided expired catheters to Barnett for use in developing the anti-reflux catheter.

17. Barnett approached another JHMI professor, Dr. Jeff Geschwind, regarding another Barnett anti-reflux catheter design because of Dr. Geschwind's superior experience with chemoembolization. As the head of the laboratory to which Barnett was assigned, Arepally was kept apprised of Barnett's discussions and work with Dr. Geschwind, and Arepally discussed that work directly with Dr. Geschwind.

18. By May 18, 2007, Barnett had developed an anti-reflux catheter design that features an expandable and retractable conical mesh tip that can be configured to either allow blood to flow through it or to prevent retrograde flow. Barnett memorialized the design in the following drawing, which was contained in a laboratory notebook to which Arepally had access and reviewed on a weekly basis:


Guidewire Channel
Infusion Port
Infused Drug
Self expanding covered stent
* Note - stent can be partially uncovered at base to allow blood flow from parent vessel →
or completely covered to prevent backflow and hold port in place
open mesh
cover
B. Barnett
May 18, '07

19. The anti-reflux catheter developed by Barnett was the subject of an invention disclosure submitted to JHU titled "Fusion Drug Delivery System – Novel Catheter/Stent Design for Targeted Drug Delivery" (the "Fusion Delivery Disclosure"), which describes and depicts the prototype of the Barnett anti-reflux catheter. *See* **Exhibit A**. Barnett built a prototype of the Fusion Delivery anti-reflux catheter, which is depicted as Figure 1 the Fusion Delivery Disclosure:

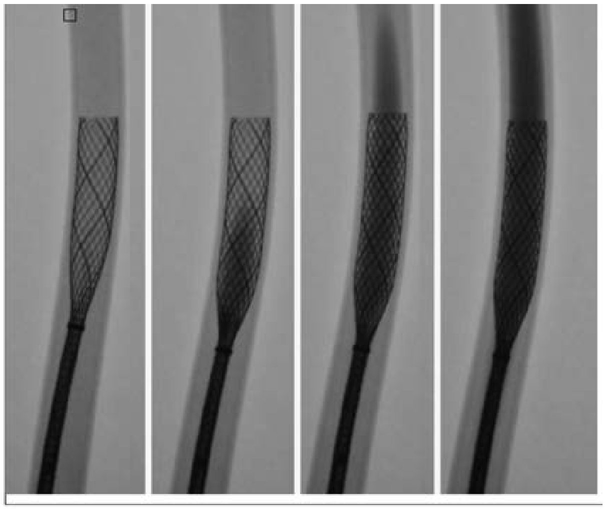


Figure 1- Sequential angiograms during infusion of iohexol contrast through the Fusion system with wire mesh opened.

20. As an inventor while at JHMI, Barnett was contractually entitled to compensation for commercialization of any patent that issued based on his invention pursuant to JHU's Intellectual Property Policy. Arepally was also bound by the terms of the JHU Intellectual Property Policy.

21. The Fusion Delivery Disclosure describes the catheter developed by Barnett as consisting of the following elements:

a. Braided tubular wire mesh constructed of wires formed or woven in such a way as to facilitate and maintain radial expansion of the mesh into a conical shape when deployed, while also allowing for contraction of the wire mesh to a tubular (non-conical) shape when pulled along its longitudinal axis, and return of the wire mesh to its deployed radially expanded dimension when the longitudinal force is released;

b. An alternative closed-cell design made of a shape memory alloy that incorporates a wire mesh that can be either covered (with a fluorinated polymer such as PTFE) or uncovered (bare metal) to either prevent or permit flow of blood through the blood vessel beyond the catheter tip;

c. Compact and biocompatible materials to cover the wire mesh, and a locking system, such as a screw clamp at the proximal tip of the catheter (outside the patient), that holds the wire mesh at a particular position and prevents motion of the wire mesh without movement of the outer portion of the catheter from which the wire mesh extends; and

d. For catheters that may need to remain in the patient's body for some period of time, a slightly deformable wire mesh and a membrane in the area where the wire mesh contacts the wall of the blood vessel to provide a means to allow blood flow through the vessel while minimizing trauma to the vessel wall.

22. Barnett is the owner by assignment of all right, title and interest in and to the anti-reflux catheter design described and disclosed in the Fusion Delivery Disclosure.

23. Throughout 2007-2008, Barnett continued to work with Arepally on the fundus delivery project that had been the impetus for Barnett's development of the anti-reflux catheter, as well as other projects of the laboratory of which Arepally was the head. Barnett and Arepally continued their collaborative work until Arepally left JHMI in 2009, and beyond.

Surefire Is Founded And Files Patent Applications For An Anti-Reflux Catheter

24. In July 2009, Arepally co-founded Surefire. Upon information and belief, Surefire was founded for the sole purpose of pursuing the manufacture and sale of the anti-reflux catheters that practice the Surefire patents.

25. On December 2, 2009, Surefire filed a revised provisional application, Application No. 61/266,068 (**Exhibit B**), that was also directed to an anti-reflux catheter that incorporated an expandable and retractable mesh tip that can be configured to either allow blood to flow through it or to prevent retrograde flow (the “Surefire Revised Provisional”). Dr. Jim Chomas (“Chomas”), Surefire’s co-founder and current CEO, is named as an inventor on the Surefire Revised Provisional, but Arepally is not. Upon information and belief, Arepally did not meet Chomas until May 2009, only a few months before filing the Surefire Revised Provisional.

26. The Surefire Revised Provisional describes and claims the anti-reflux catheter as, *inter alia*:

a. An elongated delivery catheter with at least one dispensing lumen and a deployable unidirectional valve that expands to form a seal with the blood vessel wall and that enables blood to flow in a forward direction but prevents the reverse flow of particles in the blood vessel, which is described in the specification as a catheter with at least one lumen to deliver embolic agent and an expandable member affixed to the catheter that permits forward and reverse flow of blood while stopping the reverse flow of embolizing agents, including beads that may be coated with a chemotherapy agent, radiation agent or other therapeutic agent (claim 1);

b. a collar on the expandable mesh that contacts the wall of the blood vessel when the mesh is deployed (claim 2);

c. an elongated delivery catheter with a unidirectional valve that is conical in shape (claim 28);

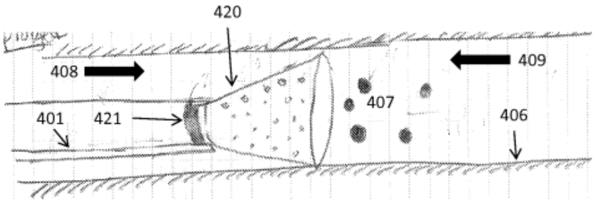
d. configurable to allow either unidirectional flow or bidirectional flow (regurgitation);

e. expandable mesh made from material with shape memory (claim 33); and

f. retractable wire mesh (specification).

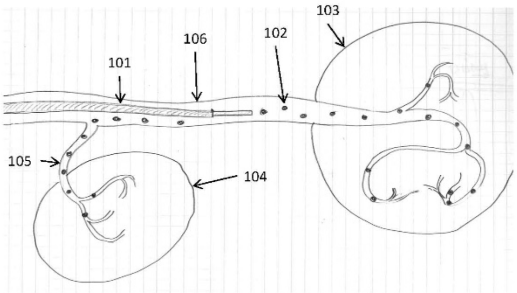
27. The anti-reflux catheter is depicted in the Surefire Revised Provisional as follows:

4C



28. The Surefire Revised Provisional identifies the addition of the expandable conical mesh to the catheter as a distinguishing feature over the prior art, which is depicted in Figure 1:

Figure 1



29. On or about June 25, 2010, Arepally executed an oath claiming to be an inventor of the anti-reflux catheter described and claimed in the Surefire Revised Provisional. Arepally was formally identified as an inventor for the first time on July 2, 2010 when Surefire filed a

non-provisional application claiming priority from the Surefire Revised Provisional. The non-provisional application was assigned Application No. 12/869,525 (the "'525 Application").

30. Ultimately, U.S. Patent No. 8,500,775 issued from the '525 Application. Figures 1 and 2 of U.S. Patent No. 8,500,775 depict, respectively, the prior art catheter design and the anti-reflux catheter design carried forward from the Surefire Revised Provisional:

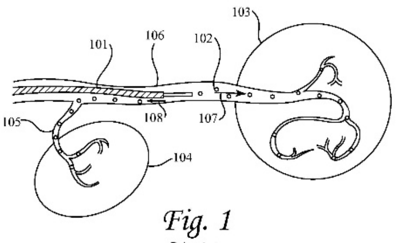


Fig. 1
Prior Art

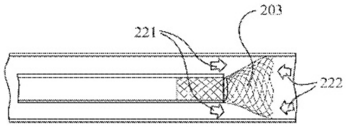


Fig. 2C

31. Other patents based in whole or in part on the disclosure of the '525 Application have since issued to Surefire, including: U.S. Patent No. 8,696,698 (continuation-in-part of U.S. Patent No. 8,500,775); U.S. Patent No. 8,696,699 (continuation-in-part of U.S. Patent No. 8,500,775); and U.S. Patent No. 9,295,540 (continuation-in-part of U.S. Patent No. 8,696,698). Surefire has also been issued other patents directed to an infusion catheter based on the same basic architecture as the one described and claimed in U.S. Patent No. 8,500,775 and its progeny, including U.S. Patent No. 9,089,341 and 9,089,668.

The Substantial Interests in the Surefire Patents

32. Pursuant to contractual provisions with JHU to which Arepally was bound, both JHU, as assignee, and inventors who are students, faculty and employees of JHU are entitled to receive a share of compensation from the licensing or practice of an invention developed at JHU. Barnett is the successor-in-interest of all such compensation for his Fusion Delivery design. Barnett has not licensed, assigned, transferred, or otherwise forsaken the compensation for the practice of his Fusion Delivery design.

33. It is JHU's policy to pursue licensing of technology which it owns. The opportunity to license the Fusion Delivery design now belongs exclusively to Barnett.

34. Barnett is also currently pursuing a career in academia. In academia, there is a definitive reputational advantage to being named an inventor on patents that result in medical products as well as receiving research grants utilizing said technology. There is a direct correlation between such reputation and the position and income that can be obtained.

35. Surefire has derived substantial benefit from its anti-reflux catheter patents, including investment it received after touting its patent protection, and the securing of grants for work with JHMI and others based on the products that practice those patents. For example, upon information and belief, within a few months of publication of the '525 Application, Surefire received over $6 million dollars in funding.

36. Upon information and belief, all the inventors named on the Surefire patents have received compensation directly related to their contribution to the conception of inventions claimed in the Surefire patents. Arepally and Chomas have also touted the inventions of the Surefire patents to advance their professional positions, including in the field of academia, and each named inventor has the opportunity to claim the reputational advantage that results from being a named inventor.

37. Beginning in 2015, Arepally has upon information and belief received at least $135,000.00 in consulting fees from Surefire directly related to the anti-reflux catheters that practice the Surefire patents.

38. Barnett has received no compensation as a result of the practice of the Surefire patents. Because he has not been named as an inventor, Barnett is deprived of the opportunity to

claim the same reputational advantage as the named inventors. Because he has not been named as an inventor, Barnett is deprived of the opportunity to license the patents to others.

Comparison of the Fusion Delivery Disclosure to the Surefire Patents

39. As shown by the Fusion Delivery Disclosure, Barnett conceived of an improved catheter to prevent the reflux of embolizing agents during the delivery of those agents consisting of a braided tubular wire mesh that (a) radially expands to a conical shape, (b) can be redeployed in a tubular (non-conical) shape using longitudinal force from the proximal end of the catheter, and returned to its conical shape when the longitudinal force is released, (c) can be constructed from shape memory alloy, (d) can be deployed by an operator from outside the patient's body, and (e) includes a membrane in the area where the deployed wire mesh meets the blood vessel wall. Arepally was aware of Barnett's conception as a result of his supervision of Barnett's work while Arepally was head of the laboratory in which Barnett worked at JHMI and as his mentor for the Howard Hughes Fellowship.

40. Surefire's U.S. Patent No. 8,500,775 claims an improved catheter to prevent the reflux of embolizing agents during the delivery of those agents consisting of a braided tubular wire mesh that (a) radially expands to a conical shape, (b) can be redeployed in a tubular (non-conical) shape using longitudinal force from the proximal end of the catheter, and returned to its conical shape when the longitudinal force is released, (c) can be constructed from shape memory alloy, (d) can be deployed by an operator from outside the patient's body, and (e) includes a membrane in the area where the deployed wire mesh meets the blood vessel wall. *See, e.g.*, **Exhibit C**, Claims 1, 6, 22, 25; Col. 4:38-57; Fig. 2A-C. Arepally is a named inventor on U.S. Patent No. 8,500,775, which was filed only after Barnett disclosed the conception of his anti-reflux catheter to Arepally.

41. Surefire's U.S. Patent No. 8,696,698 claims an improved catheter to prevent the reflux of embolizing agents during the delivery of those agents consisting of a braided tubular wire mesh that (a) radially expands to a conical shape, (b) can be redeployed in a tubular (non-conical) shape using longitudinal force from the proximal end of the catheter, and returned to its conical shape when the longitudinal force is released, (c) can be constructed from shape memory alloy, (d) can be deployed by an operator from outside the patient's body, and (e) includes a membrane in the area where the deployed wire mesh meets the blood vessel wall. *See, e.g.*, **Exhibit D**, Claims 1, 7, 16, 42, 48, 49; Col. 18:48-54; Fig. 2A-2C. Arepally is a named inventor on U.S. Patent No. 8,696,698, which was filed only after Barnett disclosed the conception of his anti-reflux catheter to Arepally.

42. Surefire's U.S. Patent No. 8,696,699 claims an improved catheter to prevent reflux of embolizing agents during the delivery of those agents consisting of a braided tubular wire mesh that (a) radially expands to a conical shape, (b) can be redeployed in a tubular (non-conical) shape using longitudinal force from the proximal end of the catheter, and returned to its conical shape when the longitudinal force is released, (c) can be constructed from shape memory alloy, (d) can be deployed by an operator from outside the patient's body, and (e) includes a membrane in the area where the deployed wire mesh meets the blood vessel wall. *See, e.g.*, **Exhibit E**, Claims 1, 7, 10, 13; Col. 18:40-46; Fig. 2A-2C. Arepally is a named inventor on U.S. Patent No. 8,696,699, which was filed only after Barnett disclosed the conception of his anti-reflux catheter to Arepally.

43. Surefire's U.S. Patent No. 9,089,341 claims an improved catheter to prevent reflux of embolizing agents during the delivery of those agents consisting of a braided tubular wire mesh that (a) radially expands to a conical shape, (b) can be redeployed in a tubular (non-

conical) shape using longitudinal force from the proximal end of the catheter, and returned to its conical shape when the longitudinal force is released, (c) can be constructed from shape memory alloy, (d) can be deployed by an operator from outside the patient's body, and (e) includes a membrane in the area where the deployed wire mesh meets the blood vessel wall. *See*, *e.g.*, **Exhibit F**, Claims 1, 5, 6, 15; Col. 8:3-6; Fig. 2-5. U.S. Patent No. 9,089,341 was filed only after Barnett disclosed the conception of his anti-reflux catheter to Arepally and Surefire was founded by Arepally and Chomas, a named inventor, to manufacture and sell anti-reflux catheters.

44. Surefire's U.S. Patent No. 9,089,668 claims an improved catheter to prevent reflux of embolizing agents during the delivery of those agents consisting of a braided tubular wire mesh that (a) radially expands to a conical shape, (b) can be redeployed in a tubular (non-conical) shape using longitudinal force from the proximal end of the catheter, and returned to its conical shape when the longitudinal force is released, and (c) can be constructed from shape memory alloy. *See, e.g.,* **Exhibit G**, Claims 1, 11, 15; Fig. 1-3. The catheter depicted in the figures of U.S. Patent No. 9,089,668 also has features similar to Barnett's "side access" catheter design to which Arepally had access as head of the laboratory in which Barnett worked as an HHMI Fellow at JHMI. U.S. Patent No. 9,089,668 was filed only after Barnett disclosed the conception of his anti-reflux catheter and "side access" catheter to Arepally and Surefire was founded by Arepally and Chomas, a named inventor, to manufacture and sell anti-reflux catheters.

45. Surefire's U.S. Patent No. 9,295,540 claims an improved catheter to prevent the reflux of embolizing agents during the delivery of those agents consisting of a braided tubular wire mesh that (a) radially expands to a conical shape, (b) can be redeployed in a tubular (non-

conical) shape using longitudinal force from the proximal end of the catheter, and returned to its conical shape when the longitudinal force is released, (c) can be constructed from shape memory alloy, (d) can be deployed by an operator from outside the patient's body, and (e) includes a membrane in the area where the deployed wire mesh meets the blood vessel wall. *See*, *e.g.*, **Exhibit H**, Claims 1, 12; Col. 7:12-35, 19:36-42; Fig. 2A-C. Arepally is a named inventor on U.S. Patent No. 9,295,540, which was filed only after Barnett disclosed the conception of his anti-reflux catheter to Arepally.

46. In August 2012, while Surefire's first patent application was still pending, JHU brought Barnett's contribution to the conception of the inventions claimed in the application to Surefire's attention. In response, Surefire refused to acknowledge Barnett's rights or to discuss his positions directly with him. In August 2013, the first patent claiming an invention that incorporates Barnett's anti-reflux catheter design issued. In November 2016, a few months after the rights to his anti-reflux catheter design were assigned to him, Barnett again brought his contribution to the conception of the inventions claimed in the Surefire patents, including additional patents that had been published and issued since August 2013, to Surefire's attention. In early 2017, Surefire again refused to acknowledge Barnett's rights or to discuss his positions directly with him.

COUNT I:

CORRECTION OF INVENTORSHIP AND DAMAGES: U.S. PATENT NO. 8,500,775

47. Barnett incorporates and restates the averments of paragraphs 1-46 above as if fully set forth herein.

48. U.S. Patent No. 8,500,775 claims and discloses an anti-reflux catheter that departs from the prior art by, *inter alia*, adding a deployable conical mesh net that prevents reflux of an

embolization agent being administered through the catheter. An embodiment of this anti-reflux catheter is depicted in, e.g., Figures 2A-2C.

49. Barnett conceived and designed an anti-reflux catheter with a deployable conical mesh net that prevents reflux of an embolization agent being administered through the catheter years before Surefire filed the application from which U.S. Patent No. 8,500,775 issued. Arepally was aware of Barnett's design at the time Arepally co-founded Surefire and then became a named inventor on U.S. Patent No. 8,500,775. Arepally disclosed Barnett's design to Chomas, Surefire's co-founder, and others acting by or on behalf of Surefire, who then misappropriated and incorporated Barnett's design in the application from which U.S. Patent 8,500,775 issued.

50. Barnett contributed to the conception of at least claims 1, 6, 22 and 25 of U.S. Patent 8,500,775.

51. Pursuant to 35 U.S.C. § 256, Barnett must be added as a named inventor to and declared a co-owner of U.S. Patent No. 8,500,775. Notice to all interested parties of Barnett's claim is hereby provided by and through the filing of this Complaint.

52. Surefire has received significant economic advantage from the practice of U.S. Patent No. 8,500,775. Barnett has never assigned, licensed or otherwise granted rights to the anti-reflux catheter he designed to Surefire, and has never received any compensation for Surefire's practice of his design.

53. As a direct and proximate result of Surefire's actions, Barnett has been deprived of the significant current and prospective economic value of being properly named as an inventor on and co-owner of U.S. Patent No. 8,500,775.

54. As a co-inventor and co-owner of the patent, Barnett is entitled to no less than a reasonable royalty as compensation for Surefire's practice of U.S. Patent No. 8,500,775.

55. Surefire's failure to name Barnett as an inventor and to compensate him for the practice of a patent on which he is rightfully a co-inventor and co-owner is intentional and done with willful disregard of Barnett's rights.

COUNT II:

CORRECTION OF INVENTORSHIP AND DAMAGES: U.S. PATENT NO. 8,696,698

56. Barnett incorporates and restates the averments of paragraphs 1-55 above as if fully set forth herein.

57. U.S. Patent No. 8,696,698 claims and discloses an anti-reflux catheter that departs from the prior art by, *inter alia*, adding a deployable conical mesh net that prevents reflux of an embolization agent being administered through the catheter. An embodiment of this anti-reflux catheter is depicted in, e.g., Figures 2A-2C.

58. Barnett conceived and designed an anti-reflux catheter with a deployable conical mesh net that prevents reflux of an embolization agent being administered through the catheter years before Surefire filed the application from which U.S. Patent No. 8,696,698 issued. Arepally was aware of Barnett's design at the time Arepally co-founded Surefire and then became a named inventor on U.S. Patent No. 8,696,698. Arepally disclosed Barnett's design to Chomas, Surefire's co-founder, and others acting by or on behalf of Surefire, who then misappropriated and incorporated Barnett's design in the application from which U.S. Patent 8,696,698 issued.

59. Barnett contributed to the conception of at least claims 1, 7, 16, 42, 48 and 49 of U.S. Patent No. 8,696,698

60. Pursuant to 35 U.S.C. § 256, Barnett must be added as a named inventor to and declared a co-owner of U.S. Patent No. 8,696,698. Notice to all interested parties of Barnett's claim is hereby provided by and through the filing of this Complaint.

61. Surefire has received significant economic advantage from the practice of U.S. Patent No. 8,696,698. Barnett has never assigned, licensed or otherwise granted rights to the anti-reflux catheter he designed to Surefire, and has never received any compensation for Surefire's practice of his design.

62. As a direct and proximate result of Surefire's actions, Barnett has been deprived of the significant current and prospective economic value of being properly named as an inventor on and co-owner of U.S. Patent No. 8,696,698.

63. As a co-inventor and co-owner, Barnett is entitled to no less than a reasonable royalty as compensation for Surefire's practice of U.S. Patent No. 8,696,698.

64. Surefire's failure to name Barnett as an inventor and to compensate him for the practice of a patent on which he is rightfully a co-inventor and co-owner is intentional and done with willful disregard of Barnett's rights.

COUNT III:

CORRECTION OF INVENTORSHIP AND DAMAGES: U.S. PATENT NO. 8,696,699

65. Barnett incorporates and restates the averments of paragraphs 1-64 above as if fully set forth herein.

66. U.S. Patent No. 8,696,699 claims and discloses an anti-reflux catheter that departs from the prior art by, *inter alia*, adding a deployable conical mesh net that prevents reflux of an embolization agent being administered through the catheter. An embodiment of this anti-reflux catheter is depicted in, e.g., Figures 2A-2C.

67. Barnett conceived and designed an anti-reflux catheter with a deployable conical mesh net that prevents reflux of an embolization agent being administered through the catheter years before Surefire filed the application from which U.S. Patent No. 8,696,699 issued. Arepally was aware of Barnett's design at the time Arepally co-founded Surefire and then became a named inventor on U.S. Patent No. 8,696,699. Arepally disclosed Barnett's design to Chomas, Surefire's co-founder, and others acting by or on behalf of Surefire, who then misappropriated and incorporated Barnett's design in the application from which U.S. Patent 8,696,699 issued.

68. Barnett contributed to the conception of at least claims 1, 7, 10 and 13 of U.S. Patent No. 8,696,699.

69. Pursuant to 35 U.S.C. § 256, Barnett must be added as a named inventor to and declared a co-owner of U.S. Patent No. 8,696,699. Notice to all interested parties of Barnett's claim is hereby provided by and through the filing of this Complaint.

70. Surefire has received significant economic advantage from the practice of U.S. Patent No. 8,696,699. Barnett has never assigned, licensed or otherwise granted rights to the anti-reflux catheter he designed to Surefire, and has never received any compensation for Surefire's practice of his design.

71. As a direct and proximate result of Surefire's actions, Barnett has been deprived of the significant current and prospective economic value of being properly named as an inventor on and co-owner of U.S. Patent No. 8,696,699.

72. As a co-inventor and co-owner, Barnett is entitled to no less than a reasonable royalty as compensation for Surefire's practice of U.S. Patent No. 8,696,699.

73. Surefire's failure to name Barnett as an inventor and to compensate him for the practice of a patent on which he is rightfully a co-inventor and co-owner is intentional and done with willful disregard of Barnett's rights.

COUNT IV:

CORRECTION OF INVENTORSHIP AND DAMAGES: U.S. PATENT NO. 9,089,341

74. Barnett incorporates and restates the averments of paragraphs 1-73 above as if fully set forth herein.

75. U.S. Patent No. 9,089,341 claims and discloses an anti-reflux catheter that departs from the prior art by, *inter alia*, adding a deployable conical mesh net that prevents reflux of an embolization agent being administered through the catheter. An embodiment of this anti-reflux catheter is depicted in, e.g., Figures 2-5.

76. Barnett conceived and designed an anti-reflux catheter with a deployable conical mesh net that prevents reflux of an embolization agent being administered through the catheter years before Surefire filed the application from which U.S. Patent No. 9,089,341 issued. Arepally was aware of Barnett's design at the time Arepally co-founded Surefire. Arepally disclosed Barnett's design to Chomas, Surefire's co-founder, and others acting by or on behalf of Surefire, who then misappropriated and incorporated Barnett's design in the application from which U.S. Patent 9,089,341 issued.

77. Barnett contributed to the conception of at least claims 1, 5, 6 and 15 of U.S. Patent No. 9,089,341.

78. Pursuant to 35 U.S.C. § 256, Barnett must be added as a named inventor to and declared a co-owner of U.S. Patent No. 9,089,341. Notice to all interested parties of Barnett's claim is hereby provided by and through the filing of this Complaint.

79. Surefire has received significant economic advantage from the practice of U.S. Patent No. 9,089,341. Barnett has never assigned, licensed or otherwise granted rights to the anti-reflux catheter he designed to Surefire, and has never received any compensation for Surefire's practice of his design.

80. As a direct and proximate result of Surefire's actions, Barnett has been deprived of the significant current and prospective economic value of being properly named as an inventor on and co-owner of U.S. Patent No. 9,089,341.

81. As a co-inventor and co-owner, Barnett is entitled to no less than a reasonable royalty as compensation for Surefire's practice of U.S. Patent No. 9,089,341.

82. Surefire's failure to name Barnett as an inventor and to compensate him for the practice of a patent on which he is rightfully a co-inventor and co-owner is intentional and done with willful disregard of Barnett's rights.

COUNT V:

CORRECTION OF INVENTORSHIP AND DAMAGES: U.S. PATENT NO. 9,089,668

83. Barnett incorporates and restates the averments of paragraphs 1-82 above as if fully set forth herein.

84. U.S. Patent No. 9,089,668 claims and discloses an anti-reflux catheter that departs from the prior art by, *inter alia*, adding a deployable conical mesh net that prevents reflux of an embolization agent being administered through the catheter. An embodiment of this anti-reflux catheter is depicted in, e.g., Figures 1-3.

85. Barnett conceived and designed an anti-reflux catheter with a deployable conical mesh net that prevents reflux of an embolization agent being administered through the catheter years before Surefire filed the application from which U.S. Patent No. 9,089,668 issued.

Arepally was aware of Barnett's design at the time Arepally co-founded Surefire. Arepally disclosed Barnett's design to Chomas, Surefire's co-founder, and others acting by or on behalf of Surefire, who then misappropriated and incorporated Barnett's design in the application from which U.S. Patent No. 9,089,668 issued.

86. Barnett contributed to the conception of at least claims 1, 11 and 15 of U.S. Patent No. 9,089,668.

87. Pursuant to 35 U.S.C. § 256, Barnett must be added as a named inventor to and declared co-owner of U.S. Patent No. 9,089,668. Notice to all interested parties of Barnett's claim is hereby provided by and through the filing of this Complaint.

88. Surefire has received significant economic advantage from the practice of U.S. Patent No. 9,089,668. Barnett has never assigned, licensed or otherwise granted rights to the anti-reflux catheter he designed to Surefire, and has never received any compensation for Surefire's practice of his design.

89. As a direct and proximate result of Surefire's actions, Barnett has been deprived of the significant current and prospective economic value of being properly named as an inventor on and co-owner of U.S. Patent No. 9,089,668.

90. As a co-inventor and co-owner, Barnett is entitled to no less than a reasonable royalty as compensation for Surefire's practice of U.S. Patent No. 9,089,068.

91. Surefire's failure to name Barnett as an inventor and to compensate him for the practice of a patent on which he is rightfully a co-inventor and co-owner is intentional and done with willful disregard of Barnett's rights.

COUNT VI:

CORRECTION OF INVENTORSHIP AND DAMAGES: U.S. PATENT NO. 9,295,540

92. Barnett incorporates and restates the averments of paragraphs 1-91 above as if fully set forth herein.

93. U.S. Patent No. 9,295,540 claims and discloses an anti-reflux catheter that departs from the prior art by, *inter alia*, adding a deployable conical mesh net that prevents reflux of an embolization agent being administered through the catheter. An embodiment of this anti-reflux catheter is depicted in, e.g., Figures 2A-2C.

94. Barnett conceived and designed an anti-reflux catheter with a deployable conical mesh net that prevents reflux of an embolization agent being administered through the catheter years before Surefire filed the application from which U.S. Patent No. 9,295,540 issued. Arepally was aware of Barnett's design at the time Arepally co-founded Surefire and then became a named inventor on U.S. Patent No. 9,295,540. Arepally disclosed Barnett's design to Chomas, Surefire's co-founder, and others acting by or on behalf of Surefire, who then misappropriated and incorporated Barnett's design in the application from which U.S. Patent 9,295,540 issued.

95. Barnett contributed to the conception of at least claims 1 and 12 of U.S. Patent 9,295,540.

96. Pursuant to 35 U.S.C. § 256, Barnett must be added as a named inventor to and declared a co-owner of U.S. Patent No. 9,295,540. Notice to all interested parties of Barnett's claim is hereby provided by and through the filing of this Complaint.

97. Surefire has received significant economic advantage from the practice of U.S. Patent No. 9,295,540. Barnett has never assigned, licensed or otherwise granted rights to the anti-reflux catheter he designed to Surefire, and has never received any compensation for Surefire's practice of his design.

98. As a direct and proximate result of Surefire's actions, Barnett has been deprived of the significant current and prospective economic value of being properly named as an inventor on and co-owner of U.S. Patent No. 9,295,540.

99. As a co-inventor and co-owner, Barnett is entitled to no less than a reasonable royalty as compensation for Surefire's practice of U.S. Patent No. 9,295,540.

100. Surefire's failure to name Barnett as an inventor and to compensate him for the practice of a patent on which he is rightfully a co-inventor and co-owner is intentional and done with willful disregard of Barnett's rights.

COUNT VII: UNJUST ENRICHMENT TO AREPALLY

101. Barnett incorporates and restates the averments of paragraphs 1-100 above as if fully set forth herein.

102. Arepally has since 2015 achieved substantial compensation above and beyond any salary from or equity in Surefire, including consulting services provided to Surefire, which additional compensation is directly related to the Surefire anti-reflux catheters that practice the Surefire patents.

103. But for Arepally's misappropriation of the design conceived by Barnett that formed the basis for the Surefire patents and the investments received by Surefire, Arepally would not have received the additional compensation related to the Surefire anti-reflux catheters that practice the Surefire patents. Arepally's additional compensation was therefore a direct benefit of Arepally's unauthorized use of Barnett's design.

104. Barnett never gave Arepally authority or permission to use his designs without compensation. Barnett expected that any use of his designs by Arepally would be compensated, but Barnett has received no compensation.

105. Arepally has therefore been unjustly enriched as a result of the unauthorized use of Barnett's design, and Barnett is entitled to restitution of no less than 50% of the value of the benefit unjustly conferred on Arepally.

WHEREFORE, the Plaintiff, Bradley Barnett, requests:

A. A declaration that Bradley Barnett is a co-inventor on and co-owner of U.S. Patents Nos. 8,500,775; 8,696,698; 8,696,699; 9,089,341; 9,089,668; and 9,295,540, and any other applications or patents filed or owned by Defendant Surefire, Inc. and to which Bradley Barnett contributed to the conception of at least one claim.

B. An order requiring the Commissioner of the United States Patent and Trademark Office to add Bradley Barnett as a named inventor to U.S. Patents Nos. 8,500,775; 8,696,698; 8,696,699; 9,089,341; 9,089,668; and 9,295,540, and any other applications or patents filed or owned by Defendant Surefire, Inc. and to which Bradley Barnett contributed to the conception of at least one claim, and to modify the United States Patent and Trademark Office's records to reflect the correction of inventorship of these patents.

C. An award of damages to Bradley Barnett in an amount that is no less than a reasonable royalty for Defendant Surefire, Inc.'s practice of the inventions of 8,500,775; 8,696,698; 8,696,699; 9,089,341; 9,089,668; and 9,295,540, and any other applications or patents filed or owned by Defendant Surefire, Inc. and to which Bradley Barnett contributed to the conception of at least one claim.

D. An award of restitution as a result of the unjust enrichment of Defendant Aravind Arepally;

E. A declaration that this is an exceptional case as a result of Defendant Surefire, Inc.'s failure to name Bradley Barnett as an inventor or to compensate Bradley Barnett has been intentional and willful.

F. An award to Bradley Barnett of his costs of suit and his reasonable attorney's fees incurred pursuing this action; and

G. Such other and further relief as this Court deems necessary and appropriate.

Dated: May 15, 2017

Respectfully Submitted,

/s/ *Billy B. Ruhling, II*
Billy B. Ruhling, II (Fed. Bar. No. 17827)
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